VANTEC®

NexStar® HX4R

Quad 3.5" SATA to USB 3.0 & eSATA
External Hard Drive RAID Enclosure w/ Fan

USB 3.0 & eSATA

RAID

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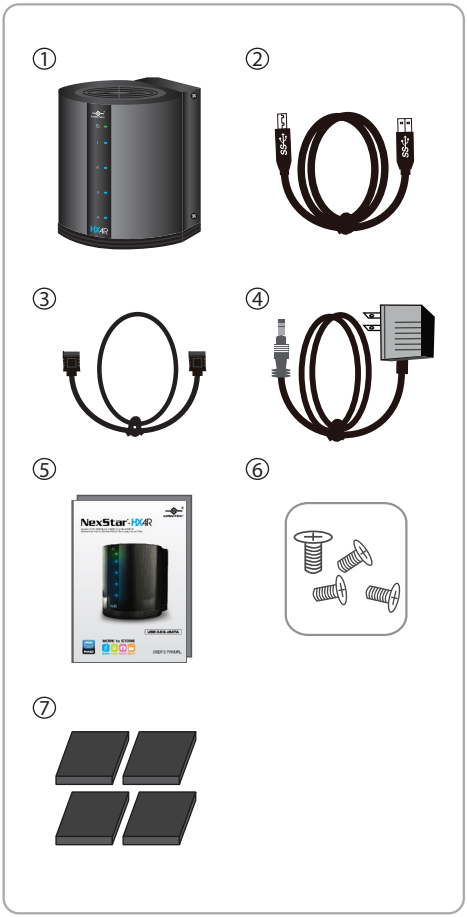
User's Manual

Package Contents:

Quad 3.5” SATA to USB 3.0 & eSATA
External Hard Drive RAID Enclosure w/ Fan

① NexStar HX4R Enclosure
② USB 3.0 Cable
③ eSATA Cable
④ Power Adapter
⑤ User’s Manual
⑥ Installation Screws
⑦ Foam Spacer



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1.Introduction:

Introducing the NexStar HX4R – a quad 3.5" SATA to USB 3.0 & eSATA External RAID Hard Drive Enclosure designed to keep all your hard drive safe and cool. This enclosure features a hard aluminum shell that effectively draws away the heat while an active controlled 80mm fan on top exhausts the hot air from the enclosure ensuring your hard drive is protected and cooled. Integrated with USB 3.0 & eSATA technology; transfer files to and from your computer at blazing fast speeds. The NexStar HX4R is also packed with support for Individual, JBOD, RAID 0, 1, 3, 5, and 10 modes making backing up, transfering, and copying your data quick and easy.

2.Specifications/Features:

Quad 3.5" SATA to USB 3.0 & eSATA External RAID Hard Drive Enclosure w/ Fan

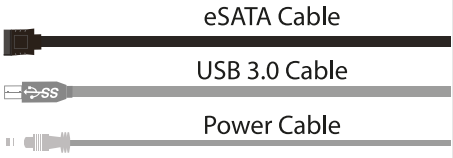
Features:

- Aluminum Casing Cools Down Your Hard Drive
- Vents To Intake Cool Air
- Maximum Transfer Rates Up to 5 Gbps w/USB 3.0
- Maximum Transfer Rates Up to 3Gbps w/eSATA
- Active Large 80mm Fan To Exhaust Heat
- Easily Add Storage to Any System with USB 2.0, 3.0 or eSATA
- Backwards-Compatible with USB 2.0 or 1.1
- Hot-Swappable: Plug & Play Without Rebooting
- Attractive LED Indicates Power & HDD Activity
- Supports Individual, JBOD, RAID 0, 1, 3, 5, & 10 Modes

Specifications:

- Model: NST-640S3R-BK
- Drive Support: SATA I/II/III Hard Drives
- Drive Size: 3.5"
- Internal Interface: SATA
- External Interface: USB 3.0 & eSATA
- HDD Capacity: Up To 12TB*
- Power Supply: AC Adapter
- Fan: 80mm
- Material: Aluminum & Plastic
- Dimension: 209 x 170 x 181 mm

*Check our website www.vantecusa.com for any updates



3.System Requirements:

Microsoft Windows XP/Vista/7

1. For USB 2.0 speeds, the system must support USB 2.0 specifications
2. For USB 3.0 speeds, the system must support USB 3.0 specifications
3. For eSATA Speeds, the System Must Support eSATA Specifications
4. Port Multiplier Is Required For eSATA

Mac OS 10.6 & greater

1. For USB 2.0 speeds, the system must support USB 2.0 specifications
2. For USB 3.0 speeds, the system must support USB 3.0 specifications
3. For eSATA Speeds, the System Must Support eSATA Specifications
4. Port Multiplier Is Required For eSATA

4.Parts Layout:

1. Tray Lock
2. HDD Tray
3. Power ON/OFF Switch
4. eSATA Port
5. USB3.0 Port
6. Fan Speed Control
7. Power Jack
8. RAID Mode Switch
9. Reset Button

Parts Layout

5.LED Indicator:

Quad 3.5” SATA to USB 3.0 & eSATA External RAID Hard Drive Enclosure w/ Fan

General Operation:

Power LED	**Green**	ON : Power on OFF: Power off
HDD 1 LED	**Blue**	ON : HDD inserted Flash Randomly: Accessing (Read/Write/Rebuild) Flash Consistently (3 flashes per second): HDD error OFF: HDD not installed/Removed/sleep mode
HDD 2 LED	**Blue**	ON : HDD inserted Flash Randomly: Accessing (Read/Write/Rebuild) Flash Consistently (3 flashes per second): HDD error OFF: HDD not installed/Removed/sleep mode
HDD 3 LED	**Blue**	ON : HDD inserted Flash Randomly: Accessing (Read/Write/Rebuild) Flash Consistently (3 flashes per second): HDD error OFF: HDD not installed/Removed/sleep mode
HDD 4 LED	**Blue**	ON : HDD inserted Flash Randomly: Accessing (Read/Write/Rebuild) Flash Consistently (3 flashes per second): HDD error OFF: HDD not installed/Removed/sleep mode

6.Installation:

Quad 3.5" SATA to USB 3.0 & eSATA External RAID Hard Drive Enclosure w/ Fan

WARNING: All data will be deleted on each hard drive during Hard Drive Mode change. Please back up your hard drive(s) before adjusting RAID mode. New hard drives must be formatted before use. *Refer to page 12 for RAID Mode Configuration.

5.1.Hardware Installation:

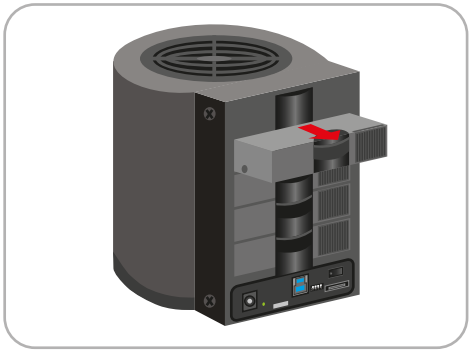
Installing the hard drive:

(1) Push lock to the left to unlock the HDD tray. (figure 61-A)

(figure 6.1-A)

(2) Take out the HDD tray

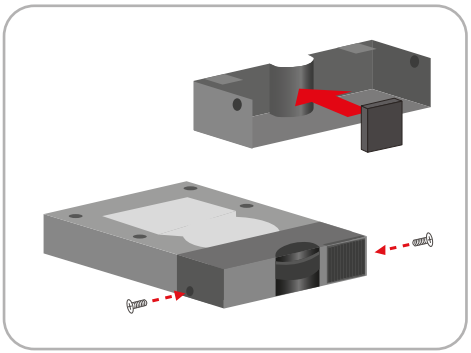
(figure 6.1-B)



(figure 6.1-B)

(3) Carefully install the hard drive into the tray. Be sure the fasten the screws firmly to the tray.

(figure 6.1-C)

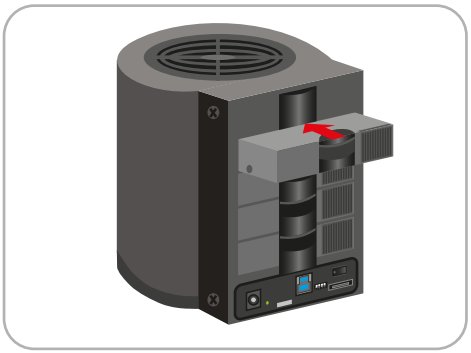


(figure6.1-C)

NOTE:

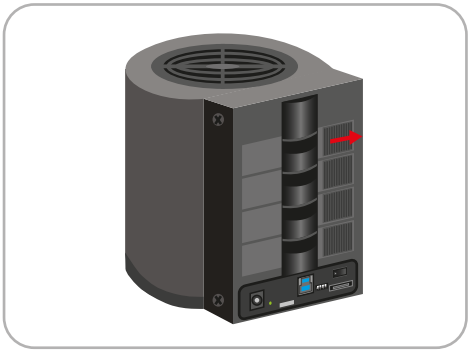
If necessary, please use the hard drive foam spacer if the hard drive cannot be mounted stably. Refer to image for foam spacer placement.

(4) Reinsert the HDD tray into the case. (figure 6.1-D)



(figure 5.1-D)

(5) Push lock to the right to lock the HDD tray. (figure 6.1-E)



(figure 5.1-E)

Connecting the NexStar to your computer:

USB 3.0

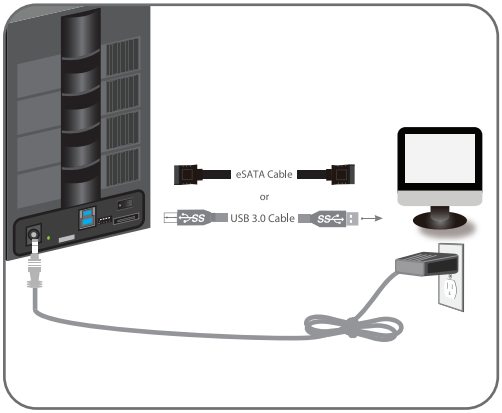
(1) Connect the type (B) USB connector to the NexStar and the type (A) USB connector to an available USB port on your system.
(2) Connect the power cable to the NexStar and plug the cable into an available outlet.
(3) Turn on the NexStar via the power switch.
(4) Your operating system should detect the NexStar and automatically install the necessary drivers. Once your operating system finishes setting up the NexStar , it will mount your hard drive. On Mac OS systems, the new volume should appear on desktop. On a Windows PC, the new volume will appear under My Computer.
(5) Your NexStar External Hard Drive is now ready for use.

eSATA

(1) Connect the eSATA to the NexStar and to an available eSATA port on your system.
(2) Connect the power cable to the NexStar and plug the cable into an available outlet.
(3) Turn on the NexStar via the power switch.
(4) Your operating system should detect the NexStar and automatically install the necessary drivers. Once your operating system finishes setting up the NexStar, it will mount your hard drive. On Mac OS systems, the new volume should appear on desktop. On a Windows PC, the new volume will appear under My Computer.
(5) Your NexStar External Hard Drive is now ready for use.

NOTE:

For new hard drives, you will need to initialize and partition your hard drive before it will appear in Windows Explorer or on your Mac desktop. Please refer to your hard drive manufacturer's documentation or read the"Creating a New Partition" section of this manual.



NOTE:

If you can see the USB icon in the system tray, but there is no any disk appear in your computer, please confirm your hard disk is partitioned.

7.RAID Mode Guide:

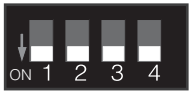
Quad 3.5" SATA to USB 3.0 & eSATA External RAID Hard Drive Enclosure w/ Fan

RAID Modes:

Individual	Pg. 11	Shows all hard drives as separate individual Hard Drives
JBOD	Pg. 12	Just a bunch of drives, Read/Write to each HDD independently Sum of 4 hard drive capacity
RAID 0	Pg. 13	RAID: Read/Write on each HDD simultaneously Capacity: Multiply the smallest capacity by 4
RAID 10 (1)	Pg. 14	RAID: Mirroring on each hard drive simultaneously Capacity equals to the smallest HDD multiply by 2 Note: 1. HDD1/HDD2 create a set of RAID 1: HDD1/2 HDD3/HDD4 create a set of RAID 1: HDD3/4 Two sets (HDD1/2, HDD3/4) create a set of RAID 0 2. When two hard drives are installed, the device will perform RAID 1 configuration. Total capacity equals capacity of smaller drive
RAID 3	Pg. 15	RAID: Byte-level striping with dedicated parity Capacity: Multiply the smallest capacity by (4-1)
RAID 5	Pg. 16	RAID: Block-level striping with distributed parity Capacity: Multiply the smallest capacity by (4-1)

RAID Switch Settings:

Normal



JBOD

RAID 0

RAID 10 (1)

RAID 3

RAID 5

(1) Power on the NexStar HX4R.

(2) Check and make sure all HDDs are installed and all LEDs light up.

(3) Connect the NexStar HX4R to the computer via USB 3.0 or eSATA cable.

(4) Locate the RAID switch and select the designated HDD mode to configure the NexStar HX4R.
Push and hold the "Reset" button for 3-5 seconds.

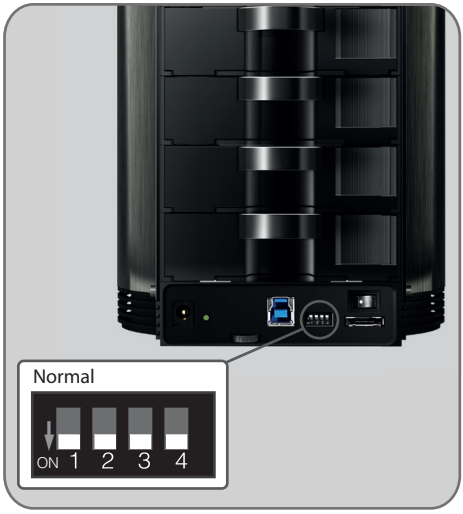
(5) The Hard Drive Mode will change according to the selection.

(6) After setting up RAID, please initialize the HDD again to have the HDD workable.

Individual(Normal) Drive Mode:

This mode enables each Hard Drive to be seen as separate single drives with separate Hard Drive capacities.

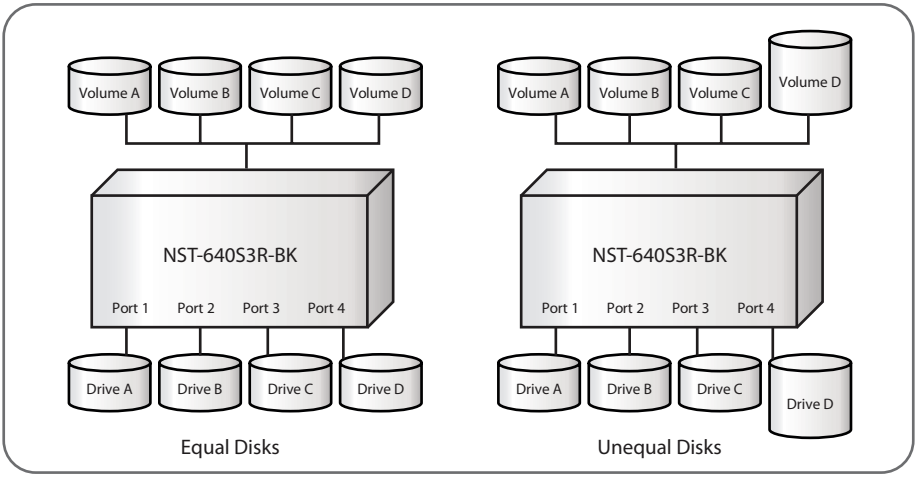
(figure 7-A) (figure 7-B)



(figure 7-A)

NOTE:

If you are using Indvidual Drive Mode with eSATA interface, your eSATA port on the system must support Port Multiplier to see more than one drive.

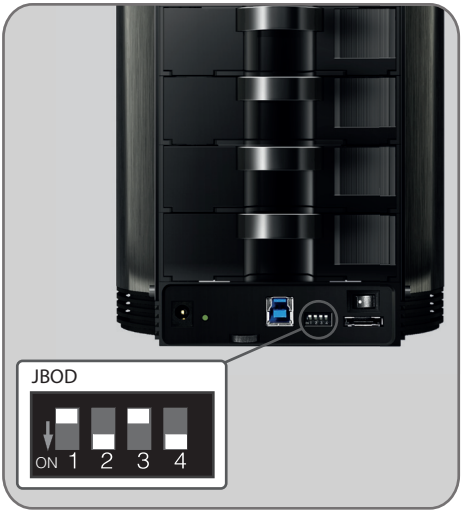


(figure 7-B)

JBOD Mode:

This mode concatenates a series of physical drives as a single large volume; Hard Drive 1 through 4 are combined into a storage capacity that is equal to the sum of each of the physical hard drives.

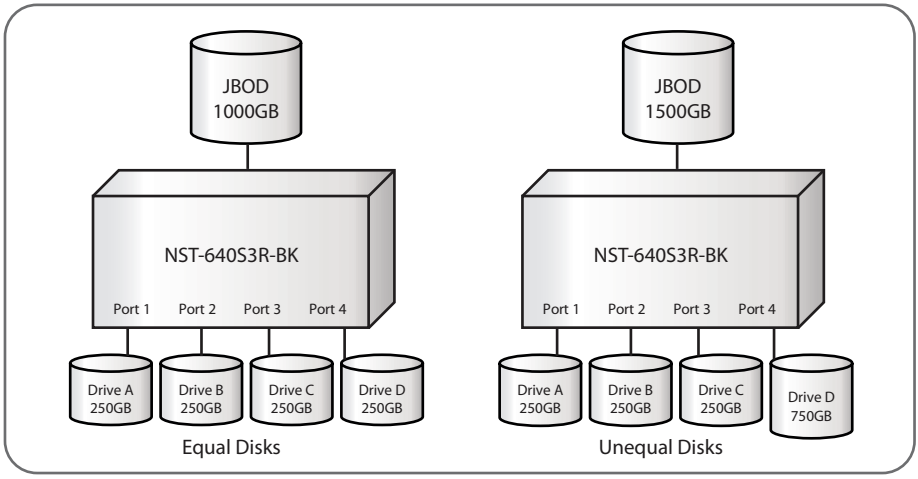
Switching to this mode will prompt to initialize and format the hard disks. If you choose to add a second hard disk at a later time, you will need to format the entire array of disks again.
(figure 7-C) (figure 7-D)



(figure 7-C)

NOTE:

All data previously stored on the hard drive will be lost! Please back up all data to a separate storage before continuing.



(figure 7-D)

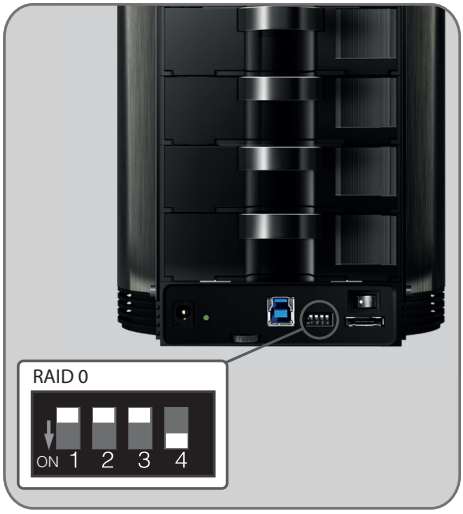
RAID 0 Mode (Striped):

This mode splits data evenly across the four Hard Drives resulting in capacity that is the sum of 4 times the smallest volume. Data access speed is increased however at the cost of no data redundancy.

Four equal hard drives: The capacity is equal to the sum of all hard drives.

Switching to this mode will prompt to initialize and format the hard disks.

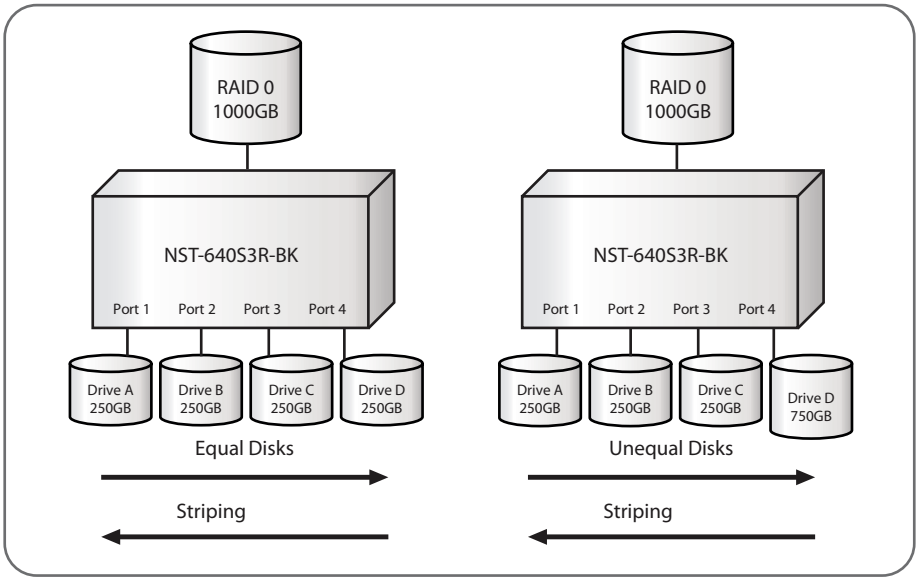
(figure 7-E) (figure 7-F)



(figure 7-E)

NOTE:

All data previously stored on the hard drive will be lost! Please back up all data to a separate storage before continuing.

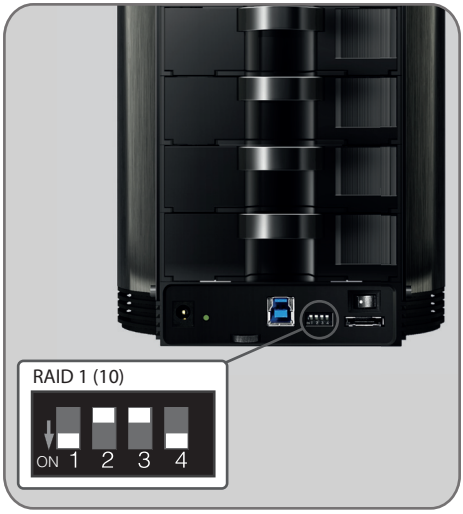


(figure 7-F)

RAID 10 (1) Mode (Mirror):

This mode allows the device to automatically copy data to 2 sets of 2 hard drives running RAID 0. It stores all data in duplicate on the two sets of RAID to protect against data loss due to drive failure. It provides the highest level of data protection for critical data that you cannot afford to lose if a hard drive fails. The capacity is equal to the smaller of the four hard drives. Switching to this mode will prompt to initialize and format the hard disks. This will not work to create a mirror set from existing hard drives.

(figure 7-G)



(figure 7-G)

NOTE:

All data previously stored on the hard drive will be lost! Please back up all data to a separate storage before continuing.

NOTE:

If one drive fails, the SAFE volume is still usable, but it is in a vulnerable state because its mirrored hard drive is inaccessible. When the offline drive comes back online, the appliance begins a rebuild process immediately to restore data redundancy. Although the volume remains available during the rebuild process, the volume is susceptible to data loss through damage to the remaining drive until redundancy is restored at the end of the rebuild and verification process. Host access takes precedence over the rebuild process. If you continue to use the SAFE volume during the rebuild, the rebuild process will take a longer time to complete, and the host data transfer performance will also be affected.

RAID 3 Mode (Byte-Level Striping)

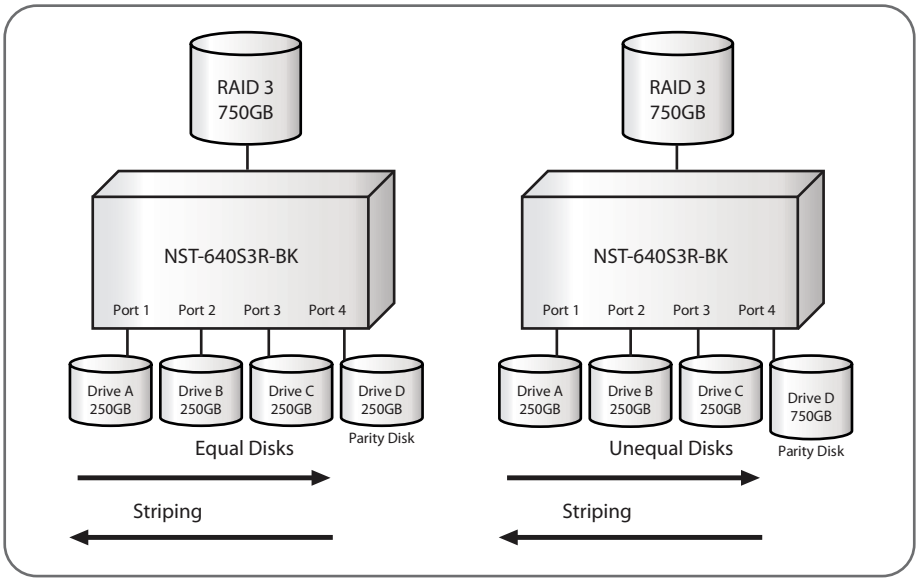
This mode performs a byte-level striping with a dedicated parity disk. This mode is generally used when application requires highest transfer rates in long sequential read and writes. Capacity is equal to the smallest multiplied by (4-1).

(figure 7-H) (figure 7-I)

(figure 7-H)

NOTE:

All data previously stored on the hard drive will be lost! Please back up all data to a separate storage before continuing.



(figure 7-I)

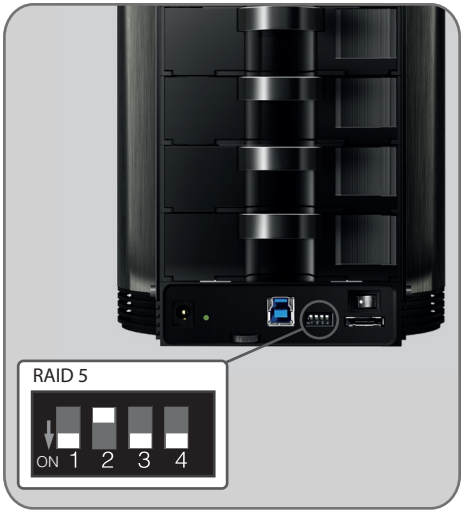
NOTE:

This mode runs the risk of loosing your entire collection of data should the parity disk and a single disk become lost.

RAID 5 Mode:

This mode uses block-level striping with parity data distributed across all disks. The capacity is equal to the smallest disk multiplied by (4-1).

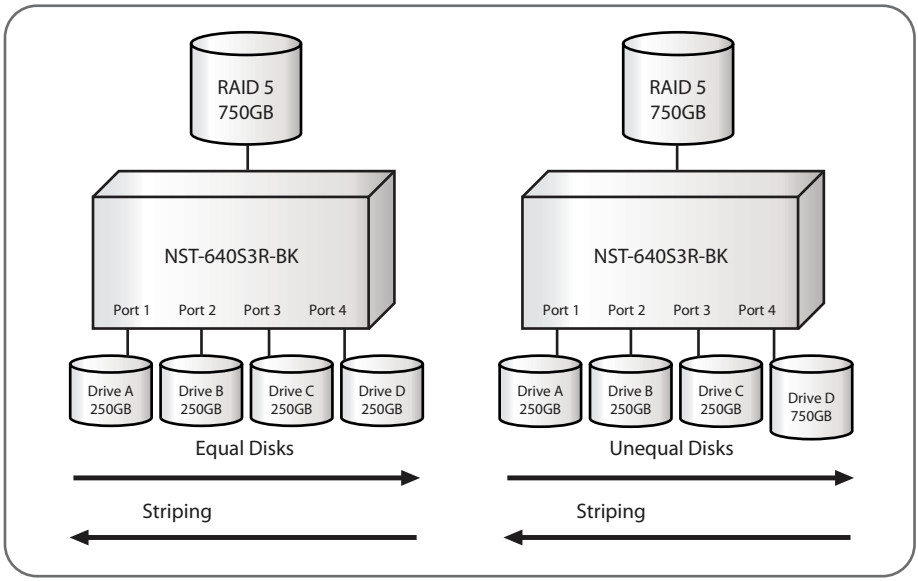
(figure 7-J) (figure 7-K)



(figure 7-J)

NOTE:

All data previously stored on the hard drive will be lost! Please back up all data to a separate storage before continuing.



(figure 7-K)

RAID Mode Configuration

8.RAID Rebuild:

RAID Rebuild

RAID rebuild can only be performed under RAID 3, 5, and 10 configuration. Please follow the following steps to start rebuilding.

1. Power off the NexStar HX4R.
2. Remove failed hard drive.
3. Install a functional hard drive.
4. Turn on the power and the NexStar HX4R will automatically start rebuilding.

LED Configuration on Rebuild Process

RAID 3/5: LED blinks irregularly

RAID 10:

HDD 1/2: LED 1/2 blinks irregularly on rebuild

HDD 3/4: LED 3/4 blinks irregularly on rebuild

LED Activity Chart: this chart describe LED activity under RAID rebuild process

● Constant On

◎ Blinks Irregularly

Operations		HDD1 LED	HDD2 LED	HDD3 LED	HDD4 LED
RAID 3		◎	◎	◎	◎
RAID 5		◎	◎	◎	◎
RAID 10	HDD 1/2	◎	◎	●	●
	HDD 3/4	●	●	◎	◎
Rebuild Complete (Online)		●	●	●	●
Rebuild Complete (Offline)					

NOTE:

1. Rebuild speed around 250GB/HR
2. Anytime when a HDD failure is detected, the LED blinks at a constant pace.
3. Online: Power cable is connected to the device, USB or eSATA cable is connected to the computer.
   Offline: Only power cable is connected to the device.

RAID Rebuild

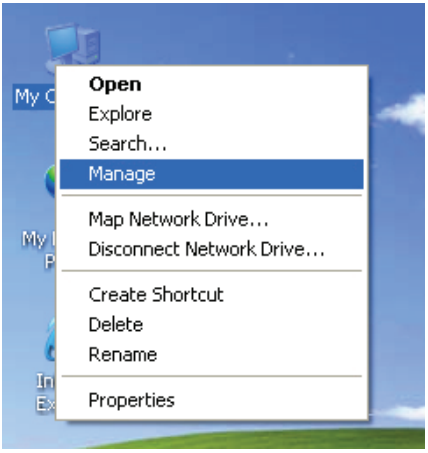
9.Hard Drive Formatting Guide

Quad 3.5" SATA to USB 3.0 & eSATA External RAID Hard Drive Enclosure w/ Fan

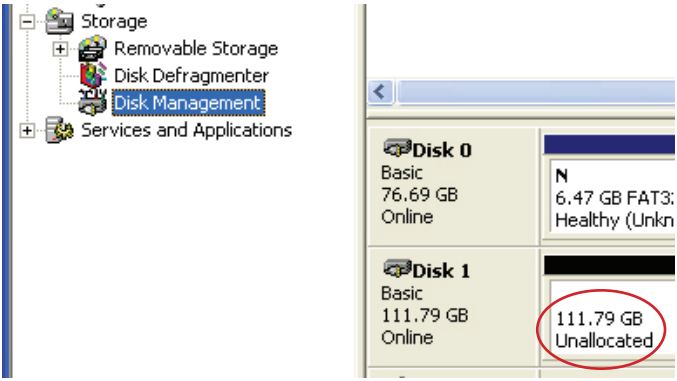
- You may format your Hard Drive by using the USB connection.
- Please make sure your External Enclosure is turned on and connected to the PC before formatting the Hard Drive.

In order to use a disk volume larger than 2 TB's, you will need an operating system that supports GUID Partitioning Table. Windows 7, Windows Vista, Windows XP 64bit, Mac 10.4, and Mac 10.5 all have this capability through the GPT. The GUID partitioning scheme has the ability to partition both internal and external drives far beyond 2 TB's in size.

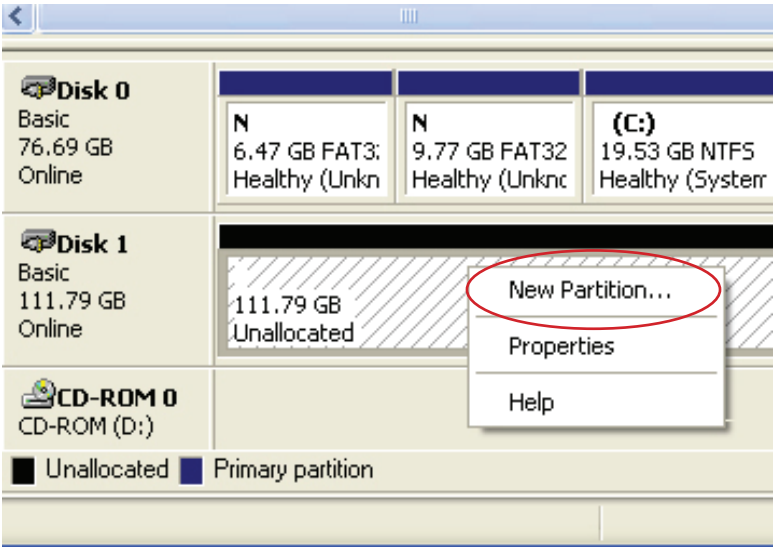
STEP1: Right-click "My Computer" and select "Manage".



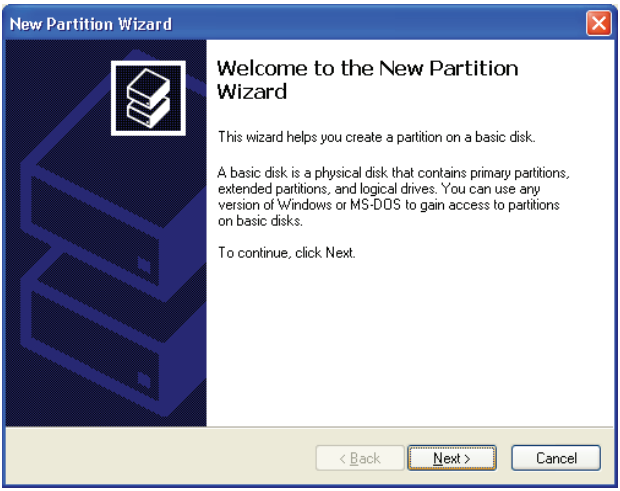
STEP2: Select "Disk Management" and you will see your Hard Drive shown as "Unallocated" (Disk number may vary)



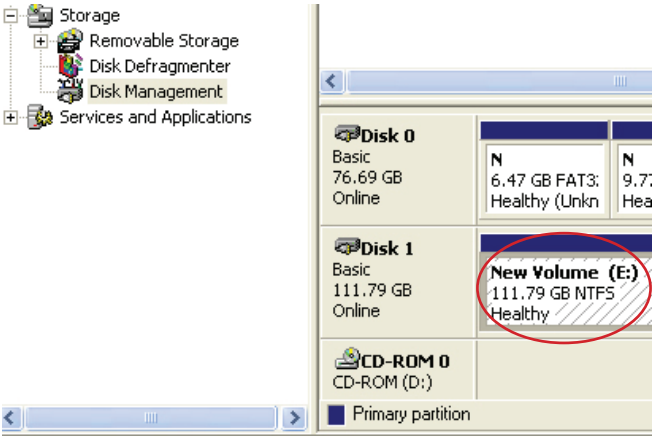
STEP3: Right-click on the "Unallocated" box and select "New Partition". (Disk number may vary)



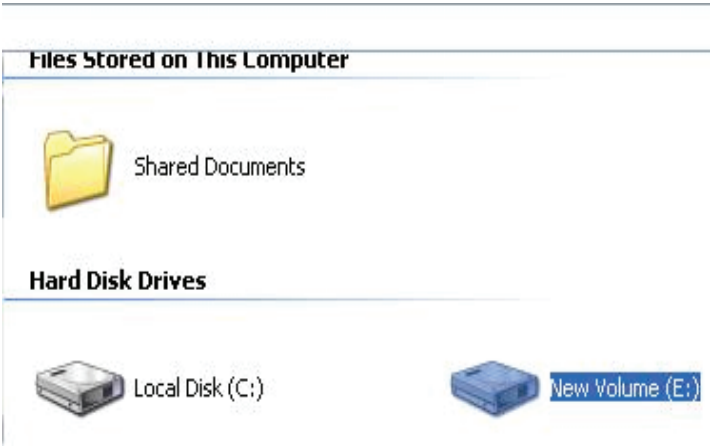
STEP4: The "New Partition Wizard" will appear. Please follow the "New Partition Wizard" step by step instructions to complete the Hard Drive formatting procedure


New Partition Wizard
Welcome to the New Partition Wizard
This wizard helps you create a partition on a basic disk.
A basic disk is a physical disk that contains primary partitions, extended partitions, and logical drives. You can use any version of Windows or MS-DOS to gain access to partitions on basic disks.
To continue, click Next.
< Back
Next >
Cancel

STEP5: Once the Hard Drive formatting procedure is completed, the Hard Drive will be recognized as a "New Volume" (New Volume drive letter may vary i.e. "New Volume (Z:)")



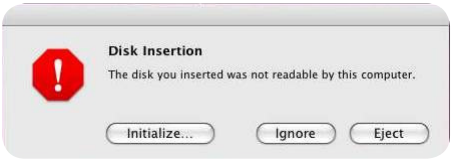
STEP6: Double-click "My Computer". You will see "New Volume" appear on your PC (Drive letter may vary i.e. "New Volume (Z:)")



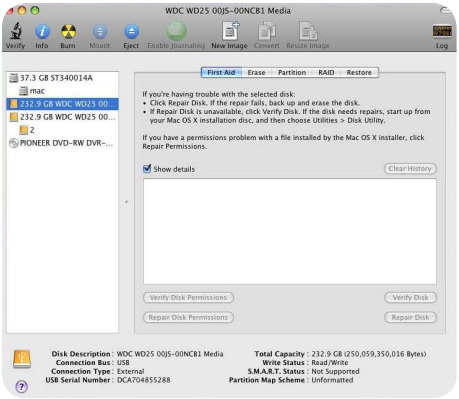
This will conclude the Hard Drive Formatting guide.

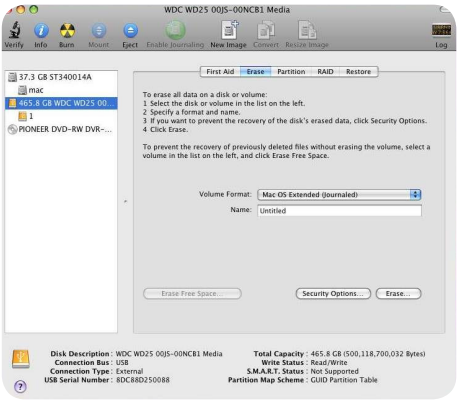
For Mac Users:

STEP1: When you connect the NexStar HX4R to a Mac with a new hard drive, the dialog "Disk Insertion" will appear. Please select "Initialize". (A formatted HDD will not display this dialog)

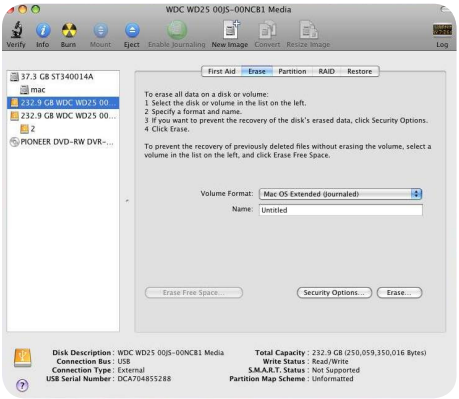


STEP2: Select which HDD you want to erase.

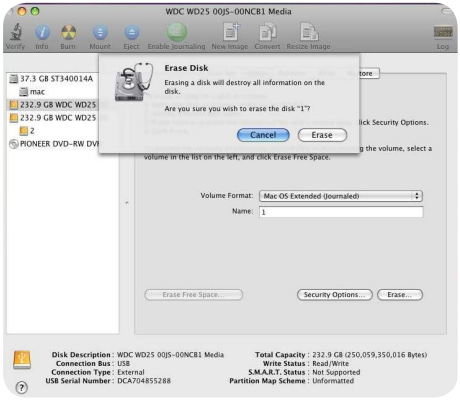

WDC WD25 00JS-00NCB1 Media
Verify
Info
Burn
Mount
Eject
Enable Journaling
New Image
Convert
Resize Image
Log
First Aid
Erase
Partition
RAID
Restore
37.3 GB ST340014A
mac
232.9 GB WDC WD25 00...
232.9 GB WDC WD25 00...
2
PIONEER DVD-RW DVR-...
If you're having trouble with the selected disk:
• Click Repair Disk. If the repair fails, back up and erase the disk.
• If Repair Disk is unavailable, click Verify Disk. If the disk needs repairs, start up from your Mac OS X installation disc, and then choose Utilities > Disk Utility.
If you have a permissions problem with a file installed by the Mac OS X installer, click Repair Permissions.
Show details
Clear History
Verify Disk Permissions
Verify Disk
Repair Disk Permissions
Repair Disk
Disk Description : WDC WD25 00JS-00NCB1 Media
Connection Bus : USB
Connection Type : External
USB Serial Number : DCA704855288
Total Capacity : 232.9 GB (250,059,350,016 Bytes)
Write Status : Read/Write
S.M.A.R.T. Status : Not Supported
Partition Map Scheme : Unformatted



STEP3: Click "Erase" at the upper right side. Select which kind of format from Volume Format. Please input the name you wish to name your new Volume. Click "Erase" at lower right side.



STEP4: After you hit "Enter", the dialog "Erase Disk" will appear. Please click "Erase" to begin formatting your hard drive.


WDC WD25 00JS-00NCB1 Media
Erase Disk
Erasing a disk will destroy all information on the disk.
Are you sure you wish to erase the disk "1"?
Cancel
Erase
Volume Format:
Mac OS Extended (Journaled)
Name:
1
Erase Free Space...
Security Options...
Erase...
Disk Description : WDC WD25 00JS-00NCB1 Media
Connection Bus : USB
Connection Type : External
USB Serial Number : DCA704855288
Total Capacity : 232.9 GB (250,059,350,016 Bytes)
Write Status : Read/Write
S.M.A.R.T. Status : Not Supported
Partition Map Scheme : Unformatted

WARING:

All data will be erased after the format

Select how you want to use your new Volume or click "Cancel" if you want to use default settings.

Do you want to use "Untitled" to back up with Time Machine?
Time Machine keeps an up-to-date copy of everything on your Mac. It not only keeps a spare copy of every file, it remembers how your system looked, so you can revisit your Mac as it appeared in the past.
Cancel
Use as Backup Disk

This will conclude the Hard Drive Formatting guide.

10.Disconnecting the NexStar HX4R:

Quad 3.5" SATA to USB 3.0 & eSATA External RAID Hard Drive Enclosure w/ Fan

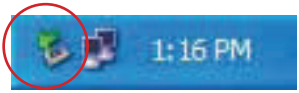
Microsoft Windows XP/Vista/7:

Make sure all operations using the hard drive within the NexStar has ceased.

Close any windows and programs pertaining to the NexStar

Double click the green "Safely Remove Hardware" icon in the system tray and select [Safely Remove USB Mass Storage Device]. Select the device you wish to remove and click on [Stop]. The system should prompt, "It is now safe to remove the USB device." If not, wait for any programs still using the device to finish and try again.

You may now safely turn off and disconnect the NexStar.



Mac OS:

Make sure all operations using the hard drive within the NexStar has ceased.

Close any windows and programs pertaining to the NexStar

From the Desktop, drag the NexStar hard drive to the trash.

You may now safely turn off and disconnect the NexStar.

WARING:

NEVER remove the NexStar while the hard drive is in use. Doing so may corrupt the data on the hard drive or damage the hard drive, NexStar and the computer.

11.Warranty:

The NexStar HX4R comes with a 1 year limited warranty (90 day parts) . If your unit should become defective within that time frame, please go to www.vantecusa.com for information on how to receive warranty exchange or repair. Cosmetic defects and missing parts are not covered under this warranty. Please check the contents of the unit to make sure you received all parts. Also, check for any cosmetic flaws. If any parts are missing or if there are cosmetic defects, please contact the retailer from which you purchased the unit immediately and ask for a replacement.

12.Contact:

Vantec Thermal Technologies

www.vantecusa.com

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